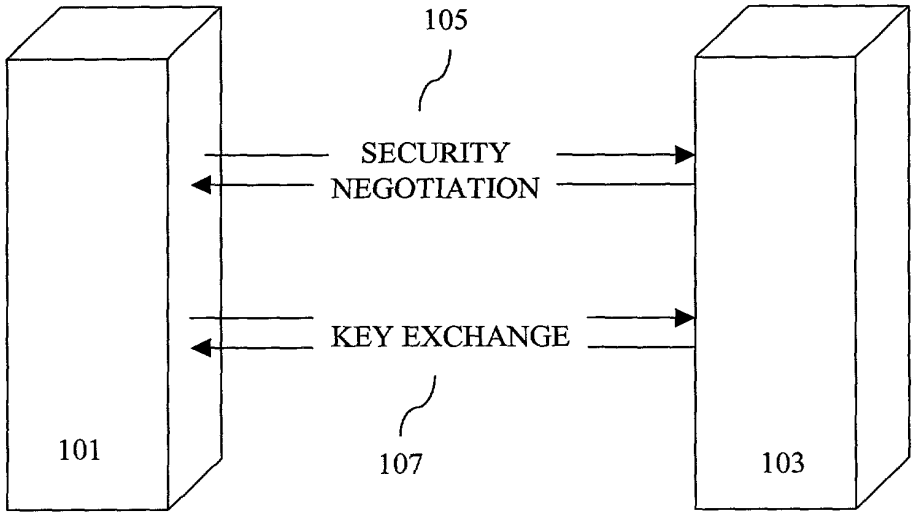

FIG. 1 (PRIOR ART)

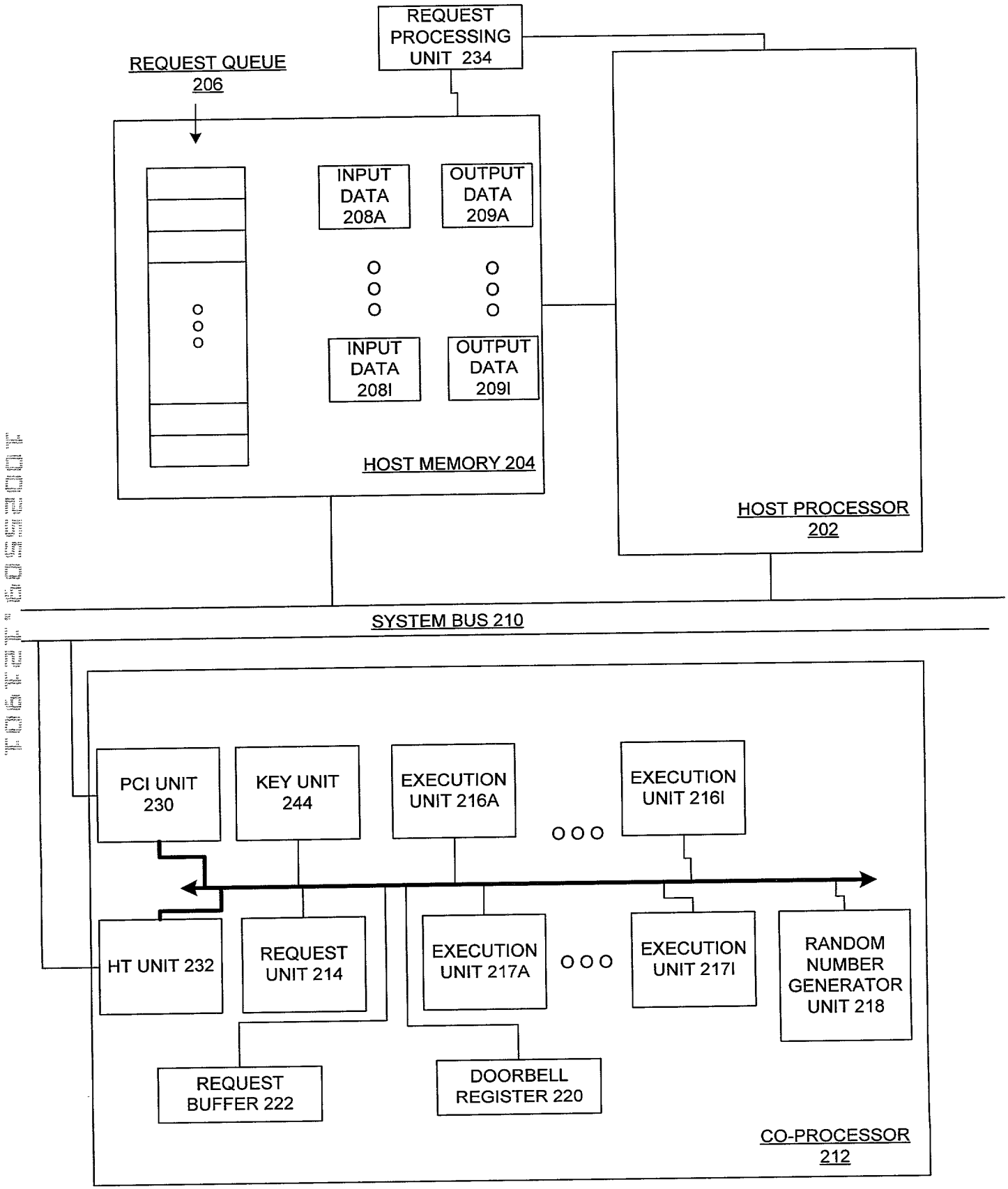
REQUEST PROCESSING UNIT 234
REQUEST QUEUE 206
INPUT DATA 208A
OUTPUT DATA 209A
INPUT DATA 208I
OUTPUT DATA 209I
HOST MEMORY 204
HOST PROCESSOR 202
SYSTEM BUS 210
PCI UNIT 230
KEY UNIT 244
EXECUTION UNIT 216A
EXECUTION UNIT 216I
HT UNIT 232
REQUEST UNIT 214
EXECUTION UNIT 217A
EXECUTION UNIT 217I
RANDOM NUMBER GENERATOR UNIT 218
REQUEST BUFFER 222
DOORBELL REGISTER 220
CO-PROCESSOR 212

FIG. 2

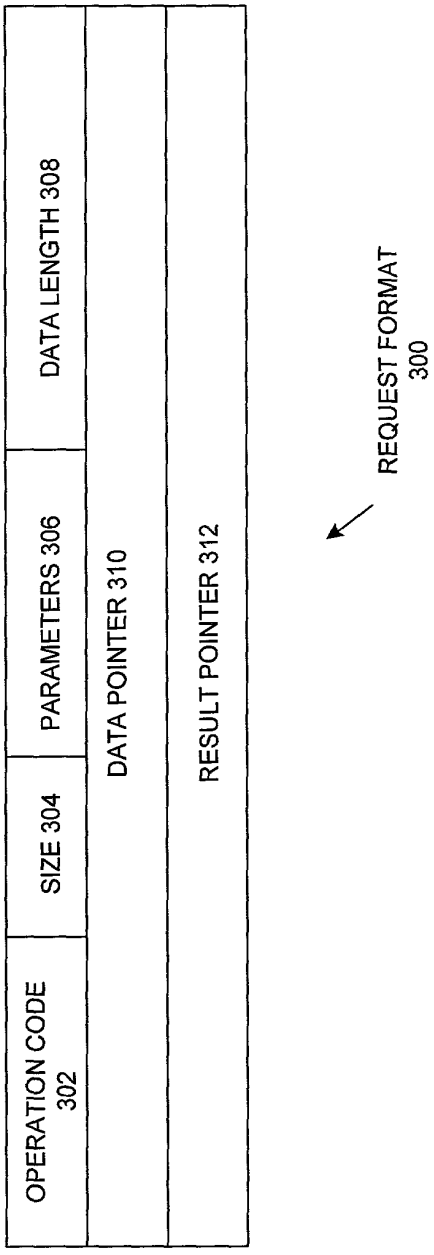
OPERATION CODE
302
SIZE 304
PARAMETERS 306
DATA LENGTH 308
DATA POINTER 310
RESULT POINTER 312
REQUEST FORMAT
300

FIG. 3

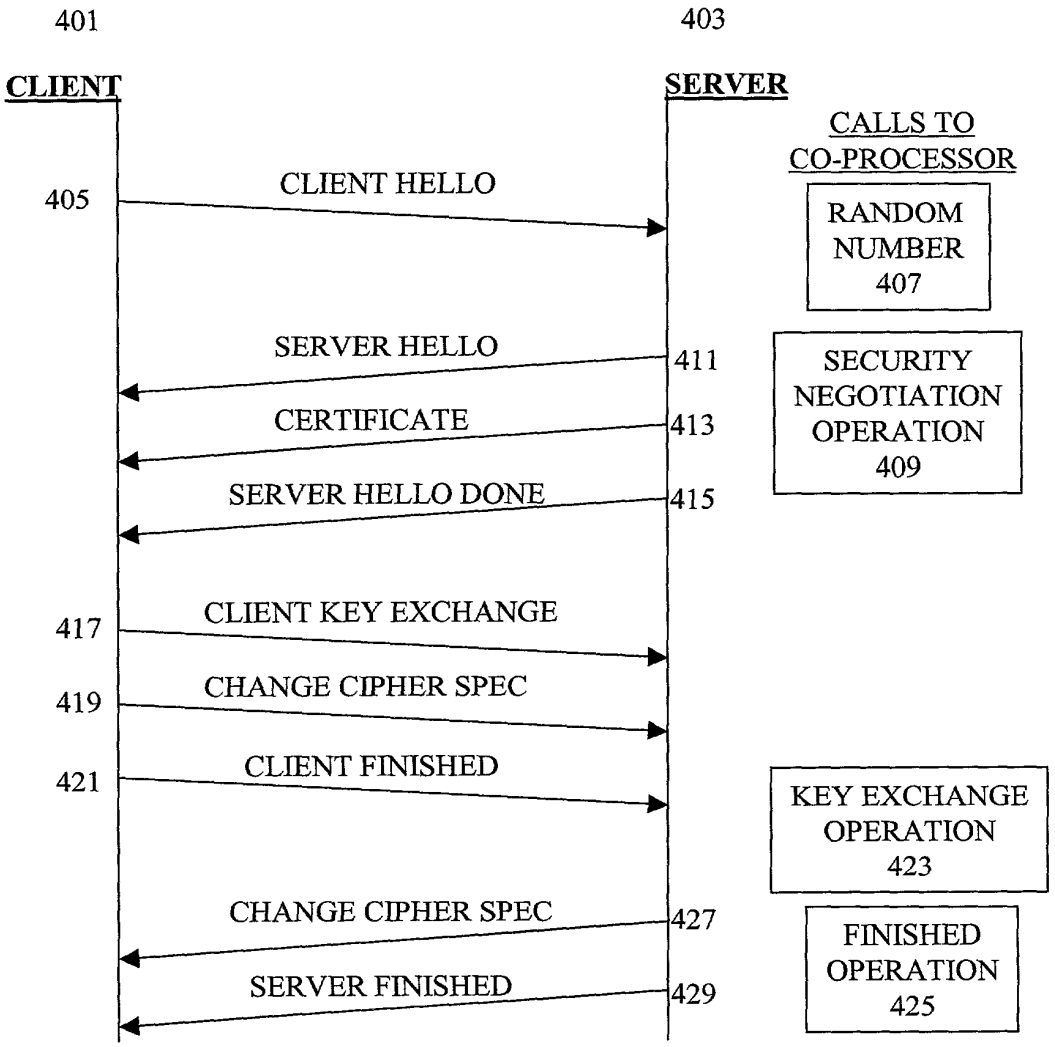
401
403
CLIENT
SERVER
CALLS TO CO-PROCESSOR
405
CLIENT HELLO
RANDOM NUMBER 407
SERVER HELLO
411
SECURITY NEGOTIATION OPERATION 409
CERTIFICATE
413
SERVER HELLO DONE
415
417
CLIENT KEY EXCHANGE
419
CHANGE CIPHER SPEC
421
CLIENT FINISHED
KEY EXCHANGE OPERATION 423
CHANGE CIPHER SPEC
427
FINISHED OPERATION 425
SERVER FINISHED
429

FIG. 4

MACRO SECURITY OPERATIONS	PRIMITIVE SECURITY OPERATIONS
SECURITY NEGOTIATION OPERATION	2 partial hash OPERATIONS (1 MD5 and 1 SHA1)
KEY EXCHANGE OPERATION	1 - RSA OPERATION 20 Hash OPERATIONS (10 MD5 + 10 SHA1) for SSL 3.0 76 Hash OPERATIONS (40 MD5 + 36 SHA1) for SSL 3.1 2 partial hash OPERATIONS (1 MD5 and 1 SHA1)
FINISHED OPERATION	1 - decrypt OPERATION (RC4 or 3DES or DES or AES) 2 – hash OPERATIONS for MAC (either MD5 or SHA1) 4 – hash OPERATIONS (2 MD5 + 2 SHA1) 4 – hash OPERATIONS (2 MD5 + 2 SHA1) 1 - encrypt OPERATION (RC4 or 3DES or DES or AES) 2 – hash OPERATIONS for MAC (either MD5 or SHA1)

FIG. 5

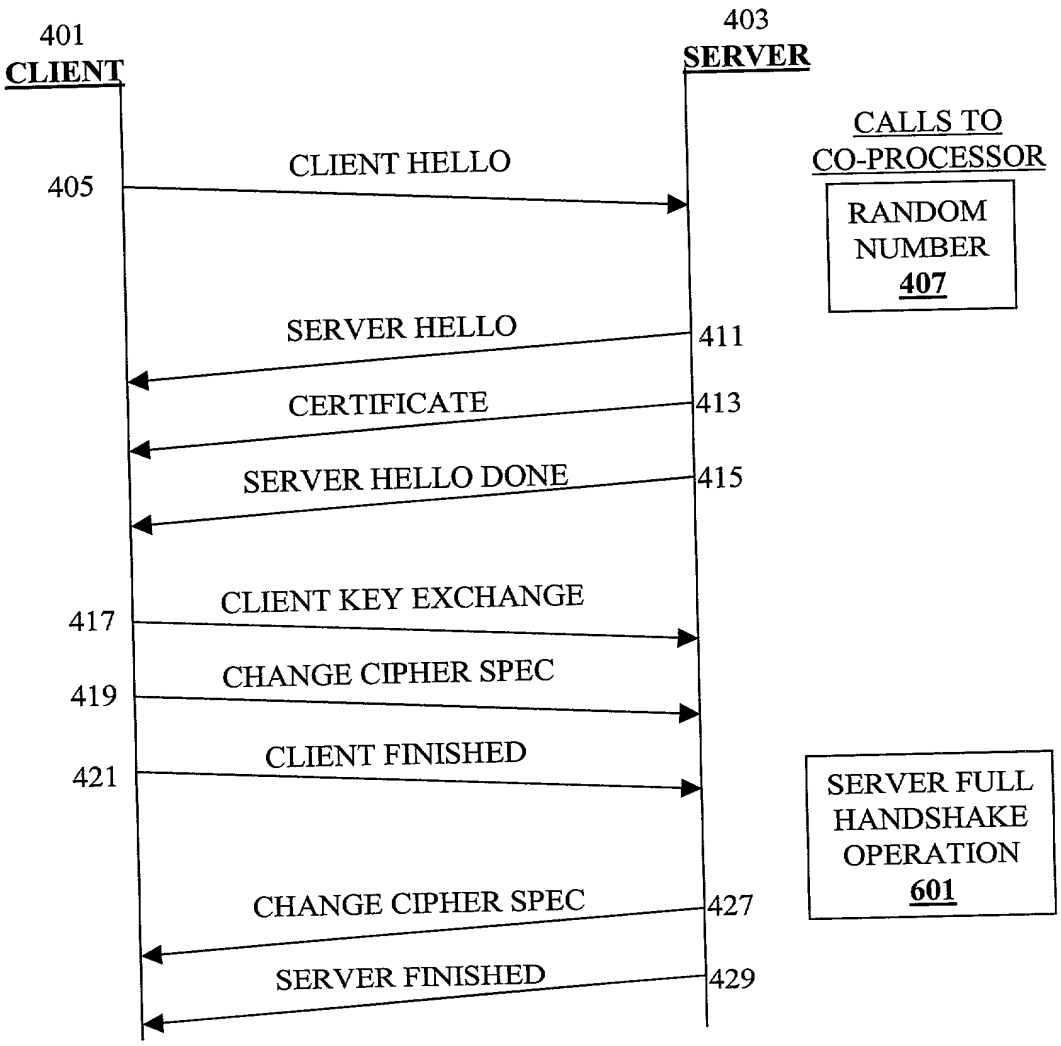
401
CLIENT
403
SERVER
CALLS TO CO-PROCESSOR
RANDOM NUMBER 407
405
CLIENT HELLO
SERVER HELLO
411
CERTIFICATE
413
SERVER HELLO DONE
415
417
CLIENT KEY EXCHANGE
419
CHANGE CIPHER SPEC
421
CLIENT FINISHED
SERVER FULL HANDSHAKE OPERATION 601
CHANGE CIPHER SPEC
427
SERVER FINISHED
429

FIG. 6

MACRO SECURITY OPERATION	PRIMITIVE SECURITY OPERATIONS
FULL HANDSHAKE OPERATION	1 - RSA OPERATION 20 Hash OPERATIONS (10 MD5 + 10 SHA1) for SSL 3.0 76 Hash OPERATIONS (40 MD5 + 36 SHA1) for SSL 3.1 6 – hash OPERATIONS (3 MD5 + 3 SHA1) 1 – encrypt OPERATION ((A)RC4 or 3DES or DES or AES) 6 – hash OPERATIONS (3 MD5 + 3 SHA1) 1 - encrypt OPERATIONS ((A)RC4 or 3DES or DES or AES) 2 – hash OPERATIONS for MAC (either MD5 or SHA1)

FIG. 7

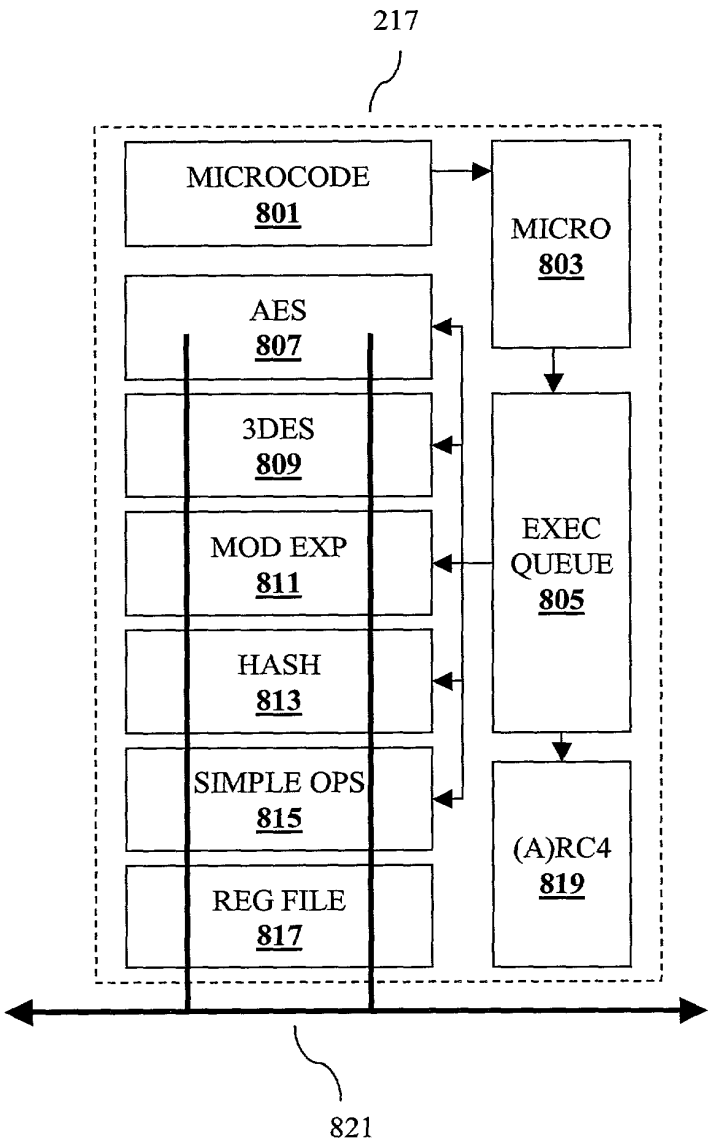
217
MICROCODE
801
MICRO
803
AES
807
3DES
809
MOD EXP
811
HASH
813
SIMPLE OPS
815
REG FILE
817
EXEC
QUEUE
805
(A)RC4
819
821

FIG. 8

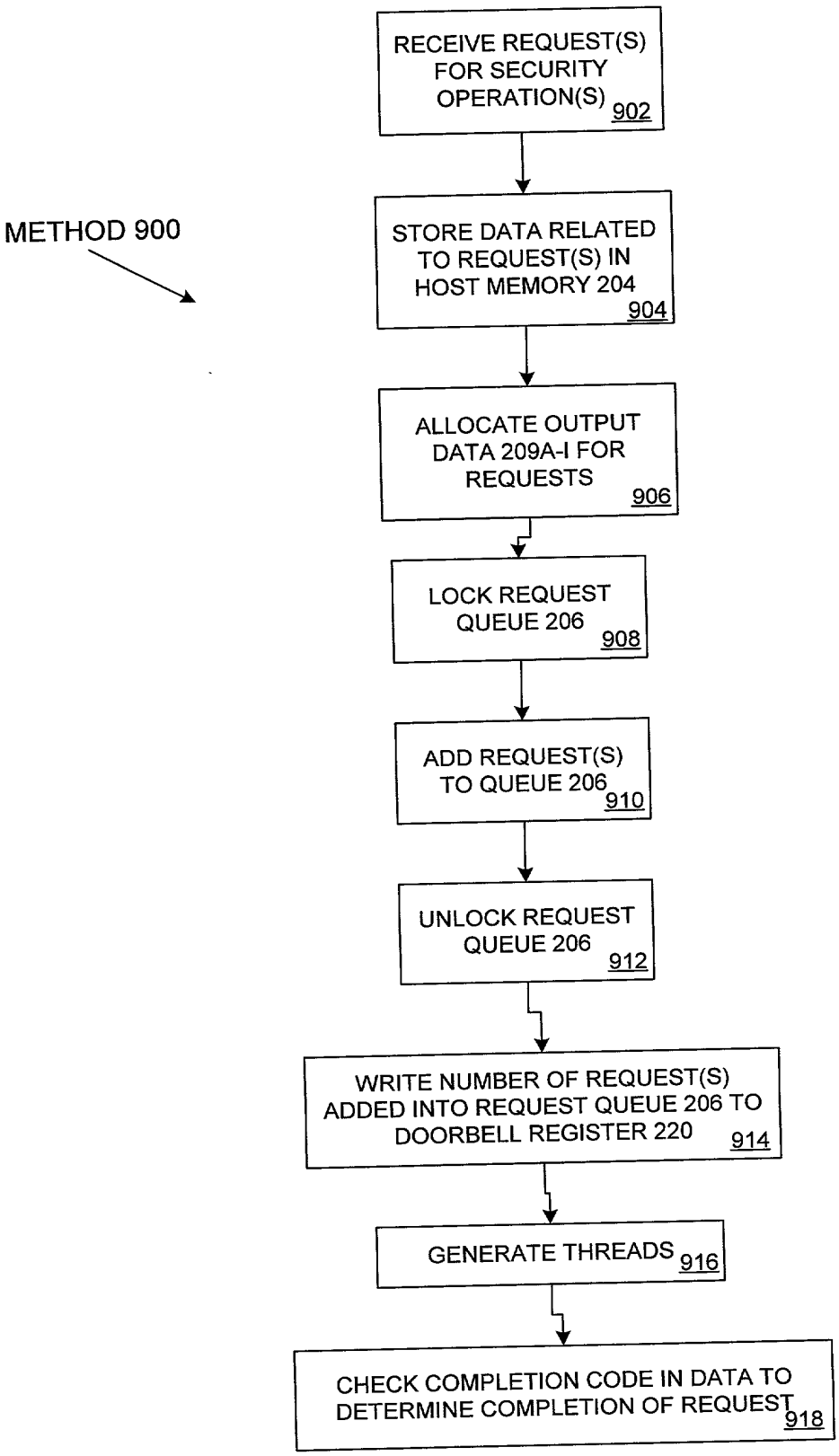
METHOD 900
RECEIVE REQUEST(S) FOR SECURITY OPERATION(S) 902
STORE DATA RELATED TO REQUEST(S) IN HOST MEMORY 204 904
ALLOCATE OUTPUT DATA 209A-I FOR REQUESTS 906
LOCK REQUEST QUEUE 206 908
ADD REQUEST(S) TO QUEUE 206 910
UNLOCK REQUEST QUEUE 206 912
WRITE NUMBER OF REQUEST(S) ADDED INTO REQUEST QUEUE 206 TO DOORBELL REGISTER 220 914
GENERATE THREADS 916
CHECK COMPLETION CODE IN DATA TO DETERMINE COMPLETION OF REQUEST 918

FIG. 9

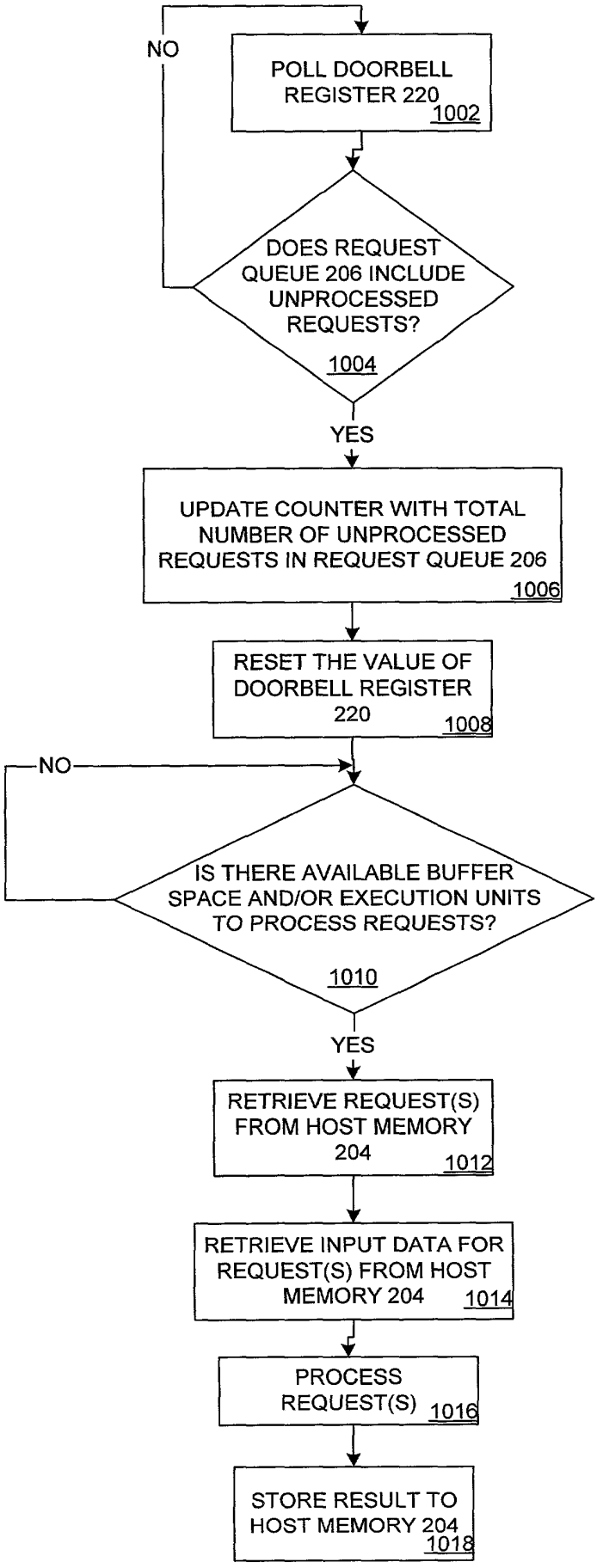

FIG. 10